

CLAIMS

1. A galvanized steel sheet excellent in post-painting corrosion resistance and paint coat image clarity, characterized in that the center line average roughness Ra of said steel sheet is 1.0 μm or less and the filtered waviness curve W_{Ca} thereof is 0.8 μm or less, said steel sheet having on the surface thereof a galvanized layer containing 1 to 10% of Mg, 2 to 19% of Al and 0.001 to 2% of Si, in mass, with the balance consisting of Zn and unavoidable impurities.

2. A galvanized steel sheet excellent in post-painting corrosion resistance and paint coat image clarity, characterized in that said plated layer of said galvanized steel sheet according to claim 1 further contains one or more elements selected from among 0.01 to 0.5% of C, 0.01 to 0.2% of Be, 0.0001 to 0.2% of Ti, 0.1 to 10% of Cu, 0.001 to 0.2% of Ni, 0.01 to 0.3% of Co, 0.0001 to 0.2% of Cr and 0.01 to 0.5% of Mn in mass.

3. A galvanized steel sheet excellent in post-painting corrosion resistance and paint coat image clarity according to claim 1 or 2, characterized in that said plated layer has a metallographic structure wherein an $[\text{Mg}_2\text{Si phase}]$, a $[\text{Zn}_2\text{Mg phase}]$ and a $[\text{Zn phase}]$ coexist in the substrate of an $[\text{Al/Zn/Zn}_2\text{Mg ternary eutectic structure}]$.

4. A galvanized steel sheet excellent in post-painting corrosion resistance and paint coat image clarity according to claim 1 or 2, characterized in that said plated layer has a metallographic structure wherein an $[\text{Mg}_2\text{Si phase}]$, a $[\text{Zn}_2\text{Mg phase}]$ and an $[\text{Al phase}]$ coexist in the substrate of an $[\text{Al/Zn/Zn}_2\text{Mg ternary eutectic structure}]$.

5. A galvanized steel sheet excellent in post-painting corrosion resistance and paint coat image clarity according to claim 1 or 2, characterized in that said plated layer has a metallographic structure wherein

an [Mg₂Si phase], a [Zn₂Mg phase], a [Zn phase] and an [Al phase] coexist in the substrate of an [Al/Zn/Zn₂Mg ternary eutectic structure].

5 6. A galvanized steel sheet excellent in post-painting corrosion resistance and paint coat image clarity according to claim 1 or 2, characterized in that said plated layer has a metallographic structure wherein an [Mg₂Si phase], a [Zn phase] and an [Al phase] coexist in the substrate of an [Al/Zn/Zn₂Mg ternary eutectic structure].

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